

6. CUMULATIVE IMPACT ANALYSIS

This section describes the general State requirements for cumulative impact analysis and proposes a methodology for analyzing potential impacts to King County shorelines.

The Guidelines state that, “The principle that regulation of development shall achieve no net loss of ecological function requires that master program policies and regulations address the cumulative impacts on shoreline ecological functions that would result from future shoreline development and uses that are reasonably foreseeable from proposed master programs.” This requirement is met by conducting an “appropriate evaluation of cumulative impacts on ecological functions.” The evaluation includes an assessment of current conditions, reasonably foreseeable future development, and the beneficial effects of established regulatory programs, as well as “the effect on the ecological functions of the shoreline that are caused by unregulated activities, development exempt from permitting, effects such as the incremental impact of residential bulkheads, residential piers, or runoff from newly developed properties” WAC 173-26-201(3)(d)(iii).

The cumulative impact analysis requires consideration of the following factors:

- Shoreline ecological functions can be impacted by development subject to shoreline permits as well as by development that is not subject to permit requirements;
- Only impacts of reasonably foreseeable future development on shoreline ecological functions needs to be considered;
- The goal of the analysis is to evaluate the extent to which the SMP achieves, as a whole, no net loss of ecological functions while accommodating appropriate and necessary shoreline uses; and
- The Shoreline Master Program incorporates the following measures to achieve no net loss of ecological functions: environment designations; development regulations that address the impacts of most common shoreline uses; critical area regulations; require mitigation for impacts of development; and restoration programs.

Key components of the Shoreline Master Program are the development regulations and mitigation requirements. These requirements are important to achieving no net loss of shoreline ecological functions, but they cannot achieve this goal on their own. For example, development that is exempt from the Shoreline Management Act; e.g., new single family residential developments, bulkheads, docks, can have a significant impact on shoreline function. Even when mitigation is provided, one-hundred percent replacement of lost function is difficult, if not impossible, to achieve. As a result, restoration programs are a key component of achieving no net loss of ecological function.

A. Methodology

King County will conduct the cumulative impact analysis after draft shoreline designations are assigned, using the following methodology:

Step 1. Use reach quality ratings from the characterization analysis to represent baseline conditions.

Step 2. Map proposed shoreline designation alternatives.

Step 3. Illustrate the projected future under the proposed Program. If there are multiple shoreline designation alternatives, a projected future will be created to illustrate the expected conditions under each alternative. The timeframe will be based on King County Buildable Lands analysis assumptions, Comprehensive Plan, permit trends, and possibly Puget Sound Regional Council projections.

- Compile statistics on current shoreline permit trends.
- Create geographic data that reflects expected future development impacts (for permitted, exempt and illegal development) based on an assumed future build-out according to zoning and proposed shoreline designations/associated development standards. Certain indicators (such as impervious surface, land cover, docks, armoring, overwater structures and/or sewer data) will be modified to reflect an assumed future, factoring in project development impacts and required setbacks, buffers and mitigation requirements. As an example, the amount of impervious surface could be increased to reflect projected future land use conditions.
- Priority restoration and protection projects will be assumed to be implemented and ecological processes and indicator data will be changed accordingly, possibly on a parcel scale. Beneficial effects of other King County programs (restoration capital improvement projects, tax incentive programs, etc.) will be accounted for in a narrative discussion.

Step 4. Rerun characterization analysis to determine reach quality ratings associated with projected future conditions.

Step 5. Compare existing reach ratings to projected future reach ratings. The difference between scores would reveal potential positive or negative changes in shoreline conditions; if alternatives are developed they can be compared.

Step 6. (Public access) Compare existing to planned future public access sites.

Options to Focus Analysis to High-Priority Areas:

Refinements to the draft cumulative impact analysis approach could include:

- Focus only on areas where significant land use change is expected (areas where proposed shoreline designations would not significantly change current level of protection would not be evaluated)
- Focus only on areas where most development is expected.

B. Results

NOTE: The methodology for cumulative impact analysis will be applied in 2007. At that time, risks associated with proposed shoreline management actions will be discussed.